Task 11: Assessment of Flight Attendant Fatigue (Nesthus, Avers, Mead)

Program Manager:
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Task Stakeholders/Sponsors
House and Senate Transportation Committees
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Project Start Date: 1/1/2008 **Anticipated End Date:** 9/30/2010

Requirements Statement
Operational Shortfall or Knowledge Gap All human performance is vulnerable to sleep loss and daily variations in the physiological processes tied to underlying body-clock mechanisms. That said, little consideration of human circadian processes has been applied toward duty time and rest scheduling for cabin crewmembers – individuals whose duties are critical to the safety and security of national air travel.
Benefit in Closing the Shortfall or Gap The information received from these studies of flight attendant fatigue will be used to inform congress regarding the frequency with which fatigue is experienced, the implications fatigue may have on performance/safety, and the conditions under which fatigue occurs.
Description of the Desired Product Completion of a report to the Congress by December 31, 2009 analyzing six areas that CAMI identified in its report of July 2006: a survey of field operations, a focused study of incident reports, field research on the effects of fatigue, a validation of models for assessing flight attendant fatigue, international policies and practices, and the potential benefits of training.
Schedule First Quarter FY10 Submit 4 technical reports for OAM approval and publication (survey, international policies and practices, incident/accident reports, benefits of training) Submit preliminary congressional report with update on 4 completed studies and 2 in progress Develop flight attendant fatigue countermeasure training program Second Quarter FY10 Continue field study data collection Submit OAM technical report for content analysis of survey responses Submit IRB for beta-test of training program Collect data for training program Third Quarter FY10 Complete field study data collection Submit OAM technical report for field study and modeling

Submit final congressional report
Brief stakeholders
Fourth Quarter FY10
Deliver completed training program

Research Objective

To address congressional concerns regarding the issue of flight attendant fatigue and determine whether current regulations provide adequate rest time for flight attendants. This objective will be achieved with the completion of research in six areas: a survey of field operations, a focused study of incident reports, field research on the effects of fatigue, a validation of models for assessing flight attendant fatigue, international policies and practices, and the potential benefits of training.

Background

In 2005 Congress directed the Civil Aerospace Medical Institute (CAMI) to conduct a preliminary investigation of flight attendant schedules and potential vulnerability to fatigue. CAMI collaboration with NASA Ames Research Center produced a 2006 report that provided evidence that fatigue-related performance decrements were likely under the current regulations and suggested six areas of research that would facilitate a more complete understanding of flight attendant fatigue and government-industry decision making.

In the FY08 Omnibus funding bill signed by the President, the Congress directed:
The Committee recommends $7,780,000 for aeromedical research, an increase of $1,000,000 more than the budget request and $748,000 more than the fiscal year 2007 enacted level. The Committee continues to be concerned about the issue of flight attendant fatigue, and whether current regulations provide adequate rest time for flight attendants. Pursuant to the Committee's request in the Consolidated Appropriations Act of 2005, the FAA submitted a report in July 2006 on the impact of the minimum rest requirements of FAR 121.467 and FAR 135.273. The study was limited in nature; however, the report stated that flight attendants are `experiencing fatigue and tiredness and as such, (fatigue) is a salient issue warranting further evaluation.' In order to gain a fuller understanding of the impact of fatigue on flight attendants, the Committee directs FAA to utilize $1,000,000 of its appropriation for CAMI to carry out its recommendations for further study of this problem. The Committee directs CAMI to submit a report to Congress not later than December 31, 2009, and expects the report to include analysis in the six areas that CAMI identified in its report of July 2006; a survey of field operations, a focused study of incident reports, field research on the effects of fatigue, a validation of models for assessing flight attendant fatigue, international policies and practices, and the potential benefits of training.

Previous Activity on this Task

Significant coordination with the Air Transport Association’s Cabin Operations Committee, the Regional Airline Association’s Inflight Committee, and the Coalition of Flight Attendants (AFA, APFA, TWU, IAM, & USW) and non-unionized airlines was made towards accomplishing the Survey and Field Study projects. The Survey was completed and an OAM TR was published with the results of initial analysis. The Incident Report Analysis, Comparative Study of Int’l Policies & Practices, as well as the Training projects were completed and OAM TRs were published. The Institutes for Behavior Resources, Inc. initiated training and data collection with CAMI and Xyant personnel assistance. A pause in data collection was scheduled for November and December 2009 in order to conduct preliminary analyses of the field study data and draft a summary report of that analysis. The Field study data collection will continue in January 2010.

Proposed or Planned Research

Completion of an executive summary report to the Congress by December 31, 2009 analyzing six areas that CAMI identified in its July 2006 report of flight attendant fatigue: a survey of field operations, a focused study of incident reports, field research on the effects of fatigue, a validation of models for assessing flight attendant fatigue, international policies and practices, and the potential benefits of training.

Research Question(s)

- What is the extent of sleep loss, fatigue, and their impact upon performance of duties among the cabin crew population and within the current duty regulations?
- To what extent can the occurrence of such effects be modeled, predicted, and controlled?
- What policies have been pursued by other nations and to what effect?
- What training might serve to reduce fatigue effects among cabin crew?

Technical Approach

Current Year

CAMI will finalize data collection and reporting for:

- a scientifically-based, randomly-selected flight attendant survey of field operations
- a field study to acquire both subjective and more importantly, objective measures from Flight Attendants regarding specific scheduling practices, operational tempo, simple test performance, quantity and quality of sleep, transmeridian travel or jet lag effects (including circadian rhythm issues), sleepiness and mood
- entry of field study data into a selection of modeling tools for estimates of operational schedule-related fatigue
- a survey of international policy and practices.
- a framework for development of a comprehensive training program
- an updated evaluation of incident/accident databases documenting fatigue-related

Out-Years

None

Air Traffic Resources Required

None

Information Technology Resources Required

None

Calibration

None

FY10 Milestone Schedule		
Description	Proposed Start Date	Proposed Completion Date
Submit 4 technical reports for OAM approval and publication (survey, international policies and practices, incident/accident reports, benefits of training)	FY09Q4	FY10Q1
Submit preliminary congressional report with update on 4 completed studies and 2 in progress	FY09Q4	FY10Q1
Develop flight attendant fatigue countermeasure training program	FY10Q1	FY10Q2
Complete field study data collection	FY09Q2	FY10Q3
Submit technical report for content analysis of survey responses	FY09Q4	FY10Q2

Submit IRB for beta-test of training program	FY09Q4	FY10Q2
Collect data for training program	FY10Q2	FY10Q4
Submit OAM technical report for field study and modeling	FY10Q2	FY10Q3
Submit final congressional report	FY10Q2	FY10Q3
Brief stakeholders	FY10Q3	FY10Q4
Deliver completed training program	FY10Q1	FY10Q4

FY10 Deliverables		
Description	Proposed completion date	Actual completion date
Submit 4 technical reports for OAM approval and publication (survey, international policies and practices, incident/accident reports, benefits of training)	FY10Q1	
Submit preliminary congressional report with update on 4 completed studies and 2 in progress	FY10Q1	
Submit technical report for content analysis of survey responses	FY10Q2	
Submit IRB for beta-test of training program	FY10Q2	
Submit OAM technical report for field study and modeling	FY10Q3	
Submit final congressional report	FY10Q3	
Deliver completed training program	FY10Q4	